

# WINDING DATA

## WIRE TABLE — Copper Wire — Heavy Insulation:

AWG	DIAMETER Copper cm	AREA Copper cm <sup>2</sup>	DIAMETER Insulatd cm	AREA Ins. cm <sup>2</sup>	OHMS/CM 20 C	OHMS/CM 100 C	AMPS for 450A/cm <sup>2</sup>
10	.259	.052620	.273	.058572	.000033	.000044	23.679
11	.231	.041729	.244	.046738	.000041	.000055	18.778
12	.205	.033092	.218	.037309	.000052	.000070	14.892
13	.183	.026243	.195	.029793	.000066	.000088	11.809
14	.163	.020811	.174	.023800	.000083	.000111	9.365
15	.145	.016504	.156	.019021	.000104	.000140	7.427
16	.129	.013088	.139	.015207	.000132	.000176	5.890
17	.115	.010379	.124	.012164	.000166	.000222	4.671
18	.102	.008231	.111	.009735	.000209	.000280	3.704
19	.091	.006527	.100	.007794	.000264	.000353	2.937
20	.081	.005176	.089	.006244	.000333	.000445	2.329
21	.072	.004105	.080	.005004	.000420	.000561	1.847
22	.064	.003255	.071	.004013	.000530	.000708	1.465
23	.057	.002582	.064	.003221	.000668	.000892	1.162
24	.051	.002047	.057	.002586	.000842	.001125	.921
25	.045	.001624	.051	.002078	.001062	.001419	.731
26	.040	.001287	.046	.001671	.001339	.001789	.579
27	.036	.001021	.041	.001344	.001689	.002256	.459
28	.032	.000810	.037	.001083	.002129	.002845	.364
29	.029	.000642	.033	.000872	.002685	.003587	.289
30	.025	.000509	.030	.000704	.003386	.004523	.229
31	.023	.000404	.027	.000568	.004269	.005704	.182
32	.020	.000320	.024	.000459	.005384	.007192	.144
33	.018	.000254	.022	.000371	.006789	.009070	.114
34	.016	.000201	.020	.000300	.008560	.011437	.091
35	.014	.000160	.018	.000243	.010795	.014422	.072
36	.013	.000127	.016	.000197	.013612	.018186	.057
37	.011	.000100	.014	.000160	.017165	.022932	.045
38	.010	.000080	.013	.000130	.021644	.028917	.036
39	.009	.000063	.012	.000106	.027293	.036464	.028
40	.008	.000050	.010	.000086	.034417	.045981	.023
41	.007	.000040	.009	.000070	.043399	.057982	.018

## American Wire Gauge (AWG) Table Formulae:

$$D_X = \frac{2.54}{\pi} 10^{-\text{AWG}/20} \quad \text{cm} \quad \text{Conductor Diameter}$$

$$D_X' = D_X + .028 - \sqrt{D_X} \quad \text{cm} \quad \text{Includes Heavy Insulation}$$

$$A_X = \pi D_X^2 / 4 \quad \text{cm}^2 \quad \text{Wire Cross-Section Area}$$

$$R_X = \rho / A_X \quad \Omega/\text{cm} \quad \text{Resistance/Length}$$